

CLAIMS

- 5        1. A method of controlling admission of a traffic flow to a communications network, the method comprising sampling the traffic flow, determining from said sampling a mean bandwidth requirement for the traffic flow and a measure of the variance from that mean, and determining from said mean and variance a price for admission of the traffic flow to the network.
  
- 10      2. A method as claimed in claim 1, wherein respective maximum bandwidth control limits are defined for both the mean and variance components of the traffic flow, and wherein said admission price is increased as the separate demands of the traffic flow approaches one or both of these limits.
  
- 15      3. A method as claimed in claim 2, wherein said price of an ingress flow is determined in the sum of separate pricing determinations for said mean and said variance.
  
- 20      4. A method as claimed in claim 2, wherein said mean pricing determination is a function of the difference between said mean and the control limit, and of the first and second derivatives against time of said means.
  
- 25      5. A method as claimed in claim 4, wherein said variance pricing determination is a function of the difference between said control limit and the sum of said mean and the standard deviation corresponding to said variance, and of the first and second derivatives against time of the standard deviation.
  
- 30      6. A method as claimed in claim 5 where said variance pricing further includes a weighting function.

5            7. A method of controlling traffic flow in a communications packet network, the method comprising determining for flows within the network a mean utilisation requirement and a measure of a variance from that mean, and determining from said mean and variance a bandwidth pricing so as to control the admission of said flows to the network.

10            8. A method of controlling admission of traffic flows to a communications network, the method comprising sampling the traffic flows each at an ingress, and sampling an aggregate flow of said flows at some or all of the resources used by the aggregate flow, determining from said sampling a mean bandwidth requirement for each traffic flow and a measure of the variance from that mean, determining from said mean and variance measurements first and second prices for the mean and variance components of the controlled traffic flows that are admitted to the network, and determining from said first and second prices an admission cost for each said flow so as to regulate the admission of that flow.

15            9. A method as claimed in claim 8, wherein maximum bandwidth control limits are defined respectively for both the mean and variance components of the traffic flow, and wherein said first and second prices are increased as the separate demands of the traffic flow approach or exceed their respective limits.

20            10. A method as claimed in claim 9, wherein said mean pricing determination is a function of the difference between said mean and the control limit and of the and of the first and second derivatives against time of said mean.

25            11. A method as claimed in claim 10, wherein said variance pricing determination is a function of the difference between said control limit and the sum of said mean and the standard deviation corresponding to said variance, and of the first and second derivatives against time of the standard deviation.

12. A method as claimed in claim 11, where said variance pricing further includes a weighting function.

5        13. A method as claimed in claim and embodied as software in machine readable form on a storage medium.

10        14. An admission control arrangement for a communications network, the arrangement comprising sampling means for sampling a traffic flow, means for determining from said sampling means a measure of mean bandwidth requirement and of a variance from that mean, and price computation means for determining from said mean and variance a cost or price for bandwidth case so as to provide ingress price control for admission of the traffic flow to the network.

15        15. An admission control arrangement as claimed in claim 14, wherein maximum bandwidth control limits are defined respectively for both the mean and variance components of the traffic flow, and wherein said first and second prices are increased as the separate demands of the traffic flow approach or exceed their respective limits.

20        16. An admission control arrangement as claimed in claim 15, wherein said mean pricing determination is a function of the difference between said mean and the control limit and of the and of the first and second derivatives against time of said mean.

25        17. An admission control arrangement as claimed in claim 16, wherein said variance pricing determination is a function of the difference between said control limit and the sum of said mean and the standard deviation

corresponding to said variance, and of the first and second derivatives against time of the standard deviation.

- 5      18. An admission control arrangement as claimed in claim 17, where said variance pricing further includes a weighting function.
- 10     19. A network manager incorporating an admission control arrangement as claimed in claim 14.
20. A network manager as claimed in claim 15, and embodied as software in machine readable form on a storage medium.